

This listing of claims will replace all prior versions,
and listings, of claims in the application:

Claim 1 (canceled)

1 Claim 2 (currently amended): In a network having a
2 plurality of nodes arranged in at least two zones, a method
3 for a particular node to determine a current partial
4 topological state of the network, the method comprising:

5 a) determining a zone of the network in which the
6 particular node resides;

7 b) for each node in the zone, determining nodes
8 having a physical communication link with the node in
9 the zone; and

10 c) for each zone in the network, determining zones
11 having a virtual connection with the zone in the
12 network,

13 ~~The method of claim 1~~ wherein the act of determining nodes
14 having a physical communication link with the node in the
15 zone includes:

16 i) broadcasting a link request from the node;

17 ii) if a response to the link request is
18 received by the node,

19 A) if the response was from a node within
20 the same zone as the node, storing an
21 identifier of the responding node, and

22 B) if the response was from a node that is
23 not within the same zone as the node,
24 storing an identifier of the zone to which
25 the responding node belongs; and

26 iii) broadcasting, from the particular node, a
27 link state message including the identifier of

28 the responding node if the response was from a
29 node within the same zone and the identifier of
30 the zone to which the responding node belongs if
31 the response was from a node not within the same
32 zone as the node.

1 Claim 3 (original): The method of claim 2, wherein the act
2 of determining nodes having a physical communication link
3 with the node in the zone further includes:

4 iv) if a link state message is received, by the
5 node, from another node, then storing the link
6 state message if the other node is within the
7 same zone as the particular node.

1 Claim 4 (currently amended): In a network having a
2 plurality of nodes arranged in at least two zones, a method
3 for a particular node to determine a current partial
4 topological state of the network, the method comprising:

5 a) determining a zone of the network in which the
6 particular node resides;
7 b) for each node in the zone, determining nodes
8 having a physical communication link with the node in
9 the zone; and
10 c) for each zone in the network, determining zones
11 having a virtual connection with the zone in the
12 network,

13 ~~The method of claim 1,~~ wherein the act, for each zone in
14 the network, of determining zones having a virtual
15 connection with the zone in the network includes:

16 i) determining whether another zone has a node
17 with a physical communications link with a node
18 in the zone, and

19 ii) if it is determined that the other zone has
20 a node with a physical communications link with
21 the zone in the zone, then storing a data
22 structure including an identification of the
23 other zone.

1 Claim 5 (previously presented): The method of claim 4,
2 wherein the act, for each zone in the network, of
3 determining zones having a virtual connection with the zone
4 in the network further includes:

5 iii) sending the stored data structure,
6 including the identification of the other zone,
7 throughout the network.

1 Claim 6 (previously presented): The method of claim 5
2 wherein the stored data structure, including the
3 identification of the other zone, is only broadcast by
4 gateway nodes.

Claim 7 (canceled)

1 Claim 8 (currently amended): In a network having a
2 plurality of nodes arranged in at least two zones, a method
3 for a particular node to determine a current partial
4 topological state of the network, the method comprising:
5 a) for each node in a zone in which the particular
6 node resides, determining nodes having a physical
7 communication link with the node in the zone; and
8 b) for each zone in the network, determining zones
9 having a virtual connection with the zone in the
10 network,

11 ~~The method of claim 7~~ wherein the act of determining nodes
12 having a physical communication link with the node in the
13 zone includes:
14 i) broadcasting a link request from the node;
15 ii) if a response to the link request is
16 received by the node,
17 A) if the response was from a node within
18 the same zone as the node, storing an
19 identifier of the responding node, and
20 B) if the response was from a node that is
21 not within the same zone as the node,
22 storing an identifier of the zone to which
23 the responding node belongs; and
24 iii) broadcasting, from the particular node, a
25 link state message including the identifier of
26 the responding node if the response was from a
27 node within the same zone as the node and the
28 identifier of the zone to which the responding
29 node belongs if the response was from a node that
30 is not within the same zone as the node.

1 Claim 9 (currently amended): In a network having a
2 plurality of nodes arranged in at least two zones, a method
3 for a particular node to determine a current partial
4 topological state of the network, the method comprising:
5 a) for each node in a zone in which the particular
6 node resides, determining nodes having a physical
7 communication link with the node in the zone; and
8 b) for each zone in the network, determining zones
9 having a virtual connection with the zone in the
10 network,

11 ~~The method of claim 7~~, wherein the act, for each zone in
12 the network, of determining zones having a virtual
13 connection with the zone in the network includes:

- 14 i) determining whether another zone has a node
15 with a physical communications link with a node
16 in the zone, and
- 17 ii) if it is determined that the other zone has
18 a node with a physical communications link with
19 the zone in the zone, then storing a data
20 structure including an identification of the
21 other zone.

1 Claim 10 (original): In a network having a plurality of
2 nodes arranged in at least two zones, a method for
3 transmitting data from a first node in the network to a
4 second node in the network, the method comprising:

- 5 a) determining whether or not the second node is in
6 the same zone as the first node;
- 7 b1) if it is determined that the second node is in
8 the same zone as the first node, then routing the data
9 towards the second node based on an intra-zone routing
10 table; and
- 11 b2) if it is determined that the second node is not
12 in the same zone as the first node, then
 - 13 i) transmitting a location request,
 - 14 ii) if a response to the location request is
15 received, then ensuring that the data is provided
16 with a zone identifier and node identifier for
17 the second node, and
 - 18 iii) routing the data based on an inter-zone
19 routing table.

Claim 11 (canceled)

1 Claim 12 (previously presented): In a network having a
2 plurality of nodes arranged in at least two zones, a method
3 for a particular node to respond to a request for the
4 location of a destination node, the method comprising:
5 a) determining whether or not the destination node is
6 in the zone of the particular node; and
7 b) if the zone of the destination node is in the zone
8 of the particular node, transmitting a reply message
9 which includes an identifier of the zone of the
10 particular node,
11 wherein the step of determining whether or not the
12 destination node is in the zone of a particular node is
13 done based on the contents of an intra-zone routing table of
14 the particular node.

1 Claim 13 (original): In a network having a plurality of
2 nodes arranged in at least two zones, a method for a
3 particular node to forward data towards a destination node
4 in a destination zone, the method comprising:
5 a) determining whether or not the destination zone of
6 the data is the same as the zone of the particular
7 node;
8 b1) if it is determined that the destination zone of
9 the data is not the same as the zone of the particular
10 node, then advancing the data towards the destination
11 zone based on an inter-zone routing table; and
12 b2) if it is determined that the destination zone of
13 the data is the same as the zone of the particular
14 node, but that the particular node is not the

15 destination node, then advancing the data towards the
16 destination node based on an intra-zone routing table.

1 Claim 14 (original): The method of claim 13 further
2 comprising:

3 b3) if it is determined that the destination zone of
4 the data is the same as the zone of the particular
5 node, and that the particular node is the destination
6 node, then reading the data.

1 Claim 15 (original): A network having a plurality of nodes
2 arranged in at least two zones, each node comprising:

3 a) a storage device, the storage device storing
4 i) a value identifying one of the at least two
5 zones in which the current node resides,
6 ii) a list of nodes with which the current node
7 has a physical communications link, and
8 iii) a list of zones with which the one of the
9 at least two zones has a virtual connection; and
10 b) a processor which can access information stored on
11 the storage device.

1 Claim 16 (original): The network of claim 15, wherein the
2 storage device further stores

3 iv) an intra-zone routing table, and
4 v) an inter-zone routing table.

1 Claim 17 (original): The network of claim 15, wherein the
2 storage device further stores

3 iv) a list of zones which include a node with
4 which the current node has a physical
5 communications link.

1 Claim 18 (original): In a network having a plurality of
2 nodes arranged in at least two zones, a node comprising:

- 3 a) a storage device, the storage device storing
 - 4 i) a value identifying one of the at least two
 - 5 zones in which the current node resides,
 - 6 ii) a list of nodes with which the current node
 - 7 has a physical communications link, and
 - 8 iii) a list of zones with which the one of the
 - 9 at least two zones has a virtual connection; and
- 10 b) a processor which can access information stored on
- 11 the storage device.

1 Claim 19 (original): The node of claim 18, wherein the
2 storage device further stores

- 3 iv) an intra-zone routing table, and
- 4 v) an inter-zone routing table.

1 Claim 20 (original): The node of claim 18, wherein the
2 storage device further stores

- 3 iv) a list of zones which include a node with
- 4 which the current node has a physical
- 5 communications link.

1 Claim 21 (original): In a network having a plurality of
2 nodes arranged in at least two zones, a method for a
3 particular node to generate intra-zone and inter-zone
4 routing tables based on a partial topological current state
5 of the network, the method comprising:

- 6 a) determining a zone of the network in which
- 7 the particular node resides;
- 8 b) for each node in the zone, determining nodes

9 having a physical communication link with the
10 node in the zone;
11 c) determining an intra-zone routing table from
12 the nodes determined to have a physical
13 communication link with the node in the zone;
14 d) for each zone in the network, determining
15 zones having a virtual connection with the zone
16 in the network; and
17 e) determining an inter-zone routing table from
18 the zones determined to have a virtual connection
19 with the zone in the network.

1 Claim 22 (original): In a network having a plurality of
2 nodes arranged in at least two zones, a method for a
3 particular node to generate intra-zone and inter-zone
4 routing tables based on a partial topological current state
5 of the network, the method comprising:
6 a) for each node in the zone, determining nodes
7 having a physical communication link with the
8 node in a zone in which the particular node
9 resides;
10 b) determining an intra-zone routing table from
11 the nodes determined to have a physical
12 communication link with the node in the zone;
13 c) for each zone in the network, determining
14 zones having a virtual connection with the zone
15 in the network; and
16 d) determining an inter-zone routing table from
17 the zones determined to have a virtual connection
18 with the zone in the network.